

**What is claimed is;**

1. A laser diode drive circuit comprising;  
a temperature compensation circuit;  
a device that stores in memory a signal from a monitor photodiode as light output power data; and  
a device that implements automatic control on temperature compensation and degradation compensation for said laser diode by using said light output power data as a reference voltage.
2. A laser diode drive circuit according to claim 1, wherein;  
a light power output data value having been stored in said storage device is regularly updated by a specific control device.
3. A laser diode drive circuit according to claim 1, wherein;  
said degradation compensation is achieved for said laser diode by changing a modulation current flowing through said laser diode so as to match the level of the light output power from said laser diode with said light power output data value stored in said storage device.
4. A laser diode drive circuit according to claim 3, wherein;  
a light power output data value having been stored in said storage device is regularly updated by a specific control device.
5. A laser diode drive circuit comprising;  
a temperature compensation circuit;  
an amplitude detection circuit constituted of a bottom detection circuit, a peak detection circuit and a differential amplifier; and

a device that stores in memory a signal provided by a monitor photodiode as light output power data wherein;

said amplitude detection circuit implements automatic control on temperature compensation, degradation compensation and extinction ratio compensation by using said light output power data as a reference voltage.

6. A laser diode drive circuit according to claim 5, wherein;  
a light power output data value having been stored in said storage device is regularly updated by a specific control device.
7. A laser diode drive circuit according to claim 5, wherein;  
said degradation compensation is achieved for said laser diode by changing a modulation current flowing through said laser diode so as to match the level of the light output power from said laser diode with said light power output data value stored in said storage device.
8. A laser diode drive circuit according to claim 7, wherein;  
a light power output data value having been stored in said storage device is regularly updated by a specific control device.
9. A laser diode drive circuit according to claim 7, wherein;  
said extinction ratio compensation is achieved for said laser diode by changing a DC bias current flowing through said laser diode so as to match the level of the light output power from said laser diode with said light power output data value stored in said storage device.
10. A laser diode drive circuit according to claim 9, wherein;

a light power output data value having been stored in said storage device is regularly updated by a specific control device.

11. An optical transmission system comprising;  
a laser diode drive circuit according to claim 1; and  
a control device that implements control on said laser diode drive circuit according to claim 1, wherein;  
said control device regularly updates data in a data storage unit.

12. An optical transmission system comprising;  
a laser diode drive circuit according to claim 3; and  
a control device that implements control said laser diode drive circuit according to claim 3, wherein;  
said control device regularly updates data in a data storage unit.

13. An optical transmission system comprising;  
a laser diode drive circuit according to claim 5; and  
a control device that implements control on said laser diode drive circuit according to claim 5, wherein;  
said control device regularly updates data in a data storage unit.

14. An optical transmission system comprising;  
a laser diode drive circuit according to claim 7; and  
a control device that implements control on said laser diode drive circuit according to claim 7, wherein;  
said control device regularly updates data in a data storage unit.

15. An optical transmission system comprising;  
a laser diode drive circuit according to claim 9; and  
a control device that implements control on said laser diode drive circuit according to claim 9, wherein;  
said control device regularly updates data in a data storage unit.

FOKI01006/US